Notice No.2

Rules and Regulations for the Classification of Special Service Craft July 2017

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices. Any corrigenda included in the Notice are effective immediately.

Please note that corrigenda amends to paragraphs, Tables and Figures are not shown in their entirety.

Issue date: October 2017

Amendments to	Effective date	Mandatory Instrument
Part 1, Chapter 2, Section 3	Corrigendum	N/A
Part 1, Chapter 3, Section 11	Corrigendum	N/A
Part 1, Chapter 4, Section 10	Corrigendum	N/A
Part 3, Chapter 5, Section 8	Corrigendum	N/A
Part 5, Chapter 2, Section 4	Corrigenda	N/A
Part 6, Chapter 2, Sections 1 & 4	Corrigenda	N/A
Part 6, Chapter 3, Section 6	Corrigendum	N/A
Part 6, Chapter 4, Section 6	Corrigenda	N/A
Part 6, Chapter 6, Section 2	Corrigendum	N/A
Part 7, Chapter 2, Sections 1 & 4	Corrigenda	N/A
Part 7, Chapter 4, Section 5	Corrigendum	N/A
Part 8, Chapter 2, Section 1	Corrigendum	N/A
Part 10, Chapter 1, Sections 11 & 15	Corrigenda	N/A
Part 11, Chapter 1, Section 4	Corrigendum	N/A
Part 14, Chapter 1, Section 6	Corrigendum	N/A
Part 17, Chapter 1, Section 2	Corrigendum	N/A

Lloyd's
Register

Part 1, Chapter 2
Classification Regulations

■ *Section 3*
Character of classification of class notations

3.5 Service area restriction notations

3.5.4 For craft that are designed in accordance with an operational envelope:

- these craft are to be operated at reduced speeds and are to seek calmer waters or refuge when the weather conditions deteriorate or are predicted to deteriorate ~~such that~~ in order that the craft is not exposed to a significant wave height and speed combination which exceeds the limits of the operational envelope ~~are exceeded~~.

Part 1, Chapter 3
Periodical Survey Regulations for Service Craft

■ *Section 11*
Shaft Survey Methods

11.6 Shaft Survey Methods

Table 3.11.3 Shaft Survey Methods

	TS METHOD 1	**TS METHOD 2**	**TS METHOD 3**	**TS METHOD ~~2~~ 4**

Part 1, Chapter 4
Periodical Survey Regulations for Yachts

■ *Section 10*
Shaft Survey Methods

10.6 Shaft Survey Methods

Table 4.10.3 Shaft Survey Methods

	TS METHOD 1	**TS METHOD 2**	**TS METHOD 3**	**TS METHOD ~~2~~ 4**

Part 3, Chapter 5
Anchoring and Mooring Equipment

■ *Section 8*

Windlass design and testing

8.1 General

Table 5.8.2 Permissible stress for design load cases

Note 2. Where a component is subjected to a combination of co-existent stresses, F_c is the combined stress which is to be calculated as follows:

= Combined bending and tension:

*F*c = ~~$F_c = 1,25f_c + f_{bt}$~~ $F_c = 1,25f_t + f_{bt}$

Part 5, Chapter 2
Local Design Loads

■ *Section 4*
Primary load criteria for multi-hull craft

4.3 Global loads for multi-hull craft with full submerged hulls

4.3.1 The design side force acting at mid-draught of the hull is given by:
$F_{FS} = G_f T \Delta^{2/3} Y_1 Y_2$ kN
where

~~Ψ_1~~ Y_1 = $1{,}55 - 0{,}75\tanh(\Delta/11000)$
~~Ψ_2~~ Y_2 = $0{,}75 + 0{,}35\tanh(1{,}64 L_S \Delta^{-1/3} - 6)$

4.4 Hydrodynamic wave pressure

4.4.1 The hydrodynamic wave pressure distribution due to relative motion, P_w, around the shell envelope up to the operating waterline, i.e. $z \le T$ is to be taken as the greater of the following:

P_m kN/m^2
as defined in *Pt 5, Ch 2, 4.4 Hydrodynamic wave pressure 4.4.2*

P_p kN/m^2
as defined in *Pt 5, Ch 2, 4.4 Hydrodynamic wave pressure 4.4.3*
~~but is not to be taken less than 7 kN/m^2 or P_d, as defined in *Pt 5, Ch 2, 4.5 Pressure on weather and interior decks, 4.5.1* at height H_w above the operating waterline, whichever is the greater.~~

Part 6, Chapter 2
Construction Procedures

■ *Section 1*
General

1.6 Quality control

1.6.2 The extent and complexity of the quality systems will vary considerably depending on the size and type of craft and production output. LR will consider certification of the Builder in accordance with the requirements of one of the following systems:

(a) Quality Assurance System in accordance with an International or National Standard (i.e. ISO 9000 and BS ENISO 9001) with assessment and certification carried out by a nationally accredited body.

~~(b) LR's Quality Assurance Scheme for the Construction of Special Service Craft.~~

~~(c)~~ (b) LR's locally accepted Quality Control System - The Builder is implementing a documented Quality Control System which controls the following activities:

- (i) Receipt storage and issue of materials, equipment etc.
- (ii) Fabrication environment.
- (iii) Weld procedures and welder performance.
- (iv) Production fabrication.
- (v) Inspection of production processes.
- (vi) Installation of machinery and essential systems.
- (vii) Fitting-out.
- (viii) Tests and trials.
- (ix) Drawings and document control.
- (x) Records.

■ *Section 4*
Joints and connections

4.10 Connections of primary structure

4.10.2 The weld connection to shell, deck or bulkhead is to take account of the material lost in the notch where longitudinals or stiffeners pass through the member. Where the width of notch exceeds 15 per cent of the stiffener spacing, the weld factor is to be multiplied by:

~~$\frac{0{,}85 \text{ x stiffener spacing}}{\text{length of web plating between notches}}$~~ $\frac{0{,}85 \text{ x stiffener spacing}}{\text{length of web plating between notches}}$

Part 6, Chapter 4
Scantling Determination for Multi-Hull Craft

■ *Section 6*
Double bottom structure

6.3 Centreline girder

6.3.1 A centre girder is to be fitted throughout the length of the craft. The web thickness, t_w, is not to be less than that required by:

$t_w = \sqrt{K_s}\left(0{,}06L_R + 3\right)$ ~~mm within 0,4L_R amidships~~ mm within 0,4L_R amidships

$t_w = \sqrt{K_s}\left(0{,}06L_R + 2\right)$ ~~mm at ends~~ mm at ends

Part 6, Chapter 6
Hull Girder Strength

■ *Section 2*
Hull girder strength for mono-hull craft

2.3 Minimum hull section modulus

2.3.1 For patrol craft in Service Group G6, the hull midship modulus about the transverse neutral axis, at the deck or the keel, is to be not less than:

$Z_{min} = \eta_{HTS} L_f L_R^2 B_{WL} (C_b + 0,7) \times 10^{-6}$ M^3

where

L_f = are given in ~~*Pt 5, Ch 2, 2.2 Symbols 2.2.2*~~ *Pt 5, Ch 5, 2.2 Vertical wave bending moments*

Part 7, Chapter 2
Construction Procedures

■ *Section 1*
General

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~~(b) LR's Quality Assurance Scheme for the Construction of Special Service Craft.~~

~~(c)~~ (b) LR's locally accepted Quality Control System - The Builder is implementing a documented Quality Control System which controls the following activities:

- (xi) Receipt storage and issue of materials, equipment etc.
- (xii) Fabrication environment.
- (xiii) Weld procedures and welder performance.
- (xiv) Production fabrication.
- (xv) Inspection of production processes.
- (xvi) Installation of machinery and essential systems.
- (xvii) Fitting-out.
- (xviii) Tests and trials.
- (xix) Drawings and document control.
- (xx) Records.

■ *Section 4*
Joints and connections

4.6 Throat thickness limits

4.6.2 Where the throat thickness calculated in *Pt 7, Ch 2, 4.5 Fillet welds 4.5.1* is less than the overriding minimum value, as required by ~~*Table 2.4.2 Typical joint preparations for semi-automatic MIG welding*~~ *Table 2.4.4 Throat thickness limits*, the limiting value is to be taken as the greater of the two. The upper limit for the throat thickness is, in general, to be as required by ~~*Table 2.4.2 Typical joint preparations for semi-automatic MIG welding*~~ *Table 2.4.4 Throat thickness limits*. Throat thicknesses above this limit will be specially considered.

Part 7, Chapter 4
Scantling Determination for Multi-Hull Craft

■ *Section 5*
Single bottom structure and appendages

5.6 Floors in machinery space

5.6.1 Floors of increased thickness may be required in way of machinery spaces, *see Pt 7, Ch 4, 5.5 Floors general 5.5.4*.

Part 8, Chapter 2
Construction Procedures

■ *Section 1*
General

1.6 Quality control

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- (iii) Weld procedures and welder performance.
- (iv) Production fabrication.
- (v) Inspection of production processes.
- (vi) Installation of machinery and essential systems.
- (vii) Fitting-out.
- (viii) Tests and trials.
- (ix) Drawings and document control.
- (x) Records.

Part 10, Chapter 1
Reciprocating Internal Combustion Engines

■ *Section 11*
Factory Acceptance Test and Shipboard Trials of Engines

11.3 Works trials (factory acceptance test)

Table 1.11.1 Scope of works trials for engines

Trial condition	Duration	Note
Main engines driving propellers and waterjets		
90 per cent (~~or maximum~~ of normal continuous power), 75 percent, 50 per cent and 25 per cent power	–	~~Powers~~ Engine speed in accordance with the nominal propeller curve, sequence to be selected by the manufacturer
Propulsion engines driving power off (PTO) generator		
90 per cent (or normal continuous ~~cruise~~ power), 75 per cent, 50 per cent and 25 per cent power	–	~~For variable speed engines. Powers~~ Engine speed in accordance with the nominal propeller curve or at constant speed *R*, sequence to be selected by the manufacturer
Engines driving mechanical auxiliaries		
75 per cent, 50 per cent and 25 per cent power	–	~~For variable speed engines. Powers~~ Engine speed in accordance with the nominal ~~propeller~~ power consumption curve, sequence to be selected by the manufacturer

■ *Section 15*
Requirements for craft which are not required to comply with the HSC Code

15.1 General

15.1.1 ~~The requirements of *Pt 9, Ch 1, 4.2 Inclinations of the craft* to apply to craft which are not required to comply with the HSC code unless specifically exempted by the contents of this Section.~~
Unless specifically stated as exempt by the contents of this Section, the following requirements apply to craft which are not required to comply with the HSC code:

- *Pt 10, Ch 1, 1 General requirements* to *Pt 10, Ch 1, 3 Crankshaft design*
- *Pt 10, Ch 1, 5 Construction and welded structures*
- *Pt 10, Ch 1, 7 Control and monitoring of main, auxiliary and emergency engines* to *Pt 10, Ch 1,10 Safety arrangements.*

15.1.2 The requirements of *Pt 9, Ch 1, 4.2 Inclinations of the craft 4.2.1* do not apply to yachts or service craft less than 24 m.

15.2 Details to be submitted

15.2.1 The requirements of *Pt 10, Ch 1, 1.3 Submission requirements Table 1.1.1 Plans and particulars* to be submitted do not apply to yachts or service craft less than 24 m, *see Pt 9, Ch 1, 6.1 Turning gear*.

15.2.2 The requirements of ~~*Pt 10, Ch 1, 1.4 Additional submission requirements 1.4.3*~~ (FMEA as detailed in ~~*Pt 9 General Requirements for Machinery*~~ *Pt 9, Ch 1, 2.3 Calculations and specifications 2.3.8*) do not apply to yachts or to service craft less than 24 m unless used for passenger carrying duties.

■ *Section 4*
Design of gearing

4.12 Backlash

4.12.1 The normal backlash between any pair of gears should not be less than:

~~$\frac{a\,\alpha_n}{90\,000}$ + 0,1 mm~~ $\frac{a \cdot \alpha_n}{90\,000}$ + 0,1 mm

Part 14, Chapter 1
Steering Systems

■ *Section 6*
Control, monitoring and electrical equipment

6.1 Control

6.1.8 Arrangements for failure detection are to be provided with self-monitoring capabilities. In the event of failure being detected, an audible and individual visual alarm is to be initiated on the navigating bridge. *See Pt 14, Ch 1, 6.2 Monitoring and alarms*. Where ~~the~~ system failure alarms for hydraulic lock, *see Table 1.6.1 Alarms*, are provided, appropriate instructions are to be placed on the control station to shut down the system at fault.

Part 17, Chapter 1

■ *Section 2* **Definitions**

2.6 Craft types

2.6.1 For the purpose of this Part the definitions of craft types given in *Pt 17, Ch 1, 2.6 Craft types 2.6.2* and ~~Pt 17, Ch 1, 2.6 Craft types 2.6.2~~ *Pt 17, Ch 1, 2.6 Craft types 2.6.3* apply.

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